ABSTRACT OF THE DISCLOSURE

The disclosed invention provides a system, a method and a computer program product for timing offset estimation for frequency selective fading channels in wireless communication systems. The disclosed invention first obtains a corrected received signal using the received signal and a pre-estimated timing offset. The pre-estimated timing offset is further tracked in two steps. In the first step a plurality of probable deviations in the pre-estimated timing offset are considered. Then a training sequence is used to determine an expected signal corresponding to each of the probable deviations. The corrected received signal is then shifted through the probable deviations. Thereafter error factor between the expected signals and corresponding shifted received signals is obtained. The probable deviation yielding optimum error factor is then identified as the first estimate of the deviation in timing offset. This first estimate is then refined using correlation techniques to obtain an improved estimate of the deviation.